DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY
INSTALLATIONS, ENERGY AND ENVIRONMENT
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WASHINGTON DC 20310-0110

20 JUN 2013

MG Glenn H. Curtis
The Adjutant General
Louisiana National Guard
6400 St. Claude Avenue
Jackson Barracks
New Orleans, LA 70117

Dear General Curtis:

Enclosed is the report from the technical assistance visit (TAV) the Army provided 7 - 9 May 2013 at the Louisiana National Guard's (LANG) Camp Minden. The Army provided this TAV as a follow-up to a TAV it had provided on 2 and 3 April 2012 in response to your request of 12 March 2013. The Commander, Camp Minden and Louisiana State Police (LASP) requested this follow-up on 1 May 2013 to assess the potential hazards associated with approximately 130,000 pounds (lbs) of Tritonal that Explo Systems, Inc. (Explo) had stored in Building 1650, and other explosives Explo has in storage at Camp Minden. The attached report provides recommendations LANG and the Louisiana State Police (LASP) may consider to improve the explosives safety posture at Camp Minden.

As requested, the Army's technical assistance team focused its assessment on the hazards associated with the handling and storage of Tritonal in Building 1650 and other explosives Explo stored at Camp Minden. The TAV team did not review Explo's personnel qualifications, operating procedures, and/or its procedures for security or accountability of explosives. LANG may want to consider evaluating these matters.

During this TAV, the TAV team:

a. Assessed the hazards associated with the handling and storage of Tritonal in Building 1650, offered to LANG a demilitarization plan for propellant and explosives generated by Explo, and recommended an approach for establishing a propellant stability program for approximately 15M lbs of M6 propellant remaining at Camp Minden for which lot identity has been lost, pending the final disposition of the M6.

b. Identified some explosives the condition of which posed a serious explosive hazard. As a result, the TAV team recommended LASP, in coordination with LANG, request follow-on technical assistance from an Army Explosive Ordnance Disposal unit. Subsequently, LASP has requested EOD's assistance in assessing the

condition of these explosives and recommending to LASP courses of action for LASP to dispose of it safely.

The team that visited Camp Minden remains available to LANG to provide further advice on the Explo materials at Camp Minden. Additionally, the US Army Technical Center for Explosives Safety is a valuable resource for all Army and National Guard activities.

Explosive safety oversight of explosive operations of the nature Explo performed at Camp Minden requires expertise in explosives safety management. Should LANG continue to lease Camp Minden's facilities for operations such as those Explo conducted, I strongly recommend it consider developing this expertise within the Camp Minden staff through attendance at explosive safety training programs the Defense Ammunition Center (DAC) offers. Although some training may require attendance at the DAC, which is located on McAlester Army Ammunition Depot, McAlster, OK, DAC offers many of its course as self-paced, distance-learning courses (see http://ammo.okstate.edu). Additionally, I recommend LANG contact the National Guard Bureau's Senior Quality Assurance Specialist (Ammunition Surveillance), Mr. Clark Combs, to request any assistance it may need to address explosives safety-related matters.

My point of contact for this matter is Mr. J. C. King, Director for Munitions and Chemical Matters, and the Army's Department of Defense Explosives Safety Board Voting Member, at (703) 697-5564; james.c.king4.civ@mail.mil.

Sincerely,

Hewolfe

Hershell E. Wolfe
Deputy Assistant Secretary of the Army
(Environment, Safety and Occupational Health)

Enclosure

Department of Army

Report

of

Explosives Safety Assistance Visit (7 to 9 May 2013)

to

Louisiana National Guard's Camp Minden

June 13, 2013

ENCLOSURE

Final Report of Explosives Safety Assistance Visit to Camp Minden (7 to 9 May 2013)

1. Background.

a. On 1 May 2013, COL Ronnie D. Stuckey, Commander, Camp Minden, Louisiana National Guard (LANG) and Lieutenant John Porter, Deputy Command Technician, LA State Police (LASP) requested the Army provide an additional technical assistance visit (TAV) to assess the potential hazards associated with approximately 130,000 pounds (lbs) of Tritonal (80 percent (%) TNT and 20% aluminum powder) stored by Explo Systems, Inc. (Explo) in building 1650 at Camp Minden, LA. LASP and LANG believed these explosives posed a potential explosive hazard to an on-post public traffic route. LASP and LANG requested the TAV also assess other explosives that Explo has in storage at Camp Minden. This was a follow-up to a TAV provided by the Army on 2 and 3 April 2013. The Army provided the report of that visit dated 18 April 2013, to The Adjutant General of the Louisiana National Guard.

b. During 7 to 9 May 2013, a team, under the direction of Mr. James Young, Headquarters, Department of the Army, G-4, conducted the requested TAV. The team consisted of:

- Mr. James Young, Quality Assurance Specialist (Ammunition Surveillance), Department of the Army, G-4
- Mr. James Lane, Defense Ammunition Center (DAC)
- Mr. Russel Ingle, DAC
- Mr. Terry Trivitt, US Army Technical Center for Explosives Safety (USATCES)
- Mr. Paul Cummins, USATCES

2. Executive Summary.

a. As requested, this TAV team assessed the hazards associated with the handling and storage of Tritonal in building 1650, offered to the LANG a demilitarization plan for propellant and explosives generated by Explo, and recommended an approach for establishing a propellant stability program for approximately 15M lbs of M6 propellant remaining at Camp Minden for which lot identity has been lost, pending the final disposition of the M6.

b. The TAV team observed additional explosives that Explo had in storage beyond the M6 propellant addressed by the initial TAV, which was conducted 2 and 3 April 2013, and the Tritonal in building 1650. The Tritonal in building 1650 was the primary subject of this TAV. Recommendations to address the potential explosive hazards associated with these additional observations are made below. The total quantity of Explo explosive material the TAV team observed at Camp Minden included:

- 128 lbs of Black Powder
- 200 lbs of Composition H6

- 4 50-gallon drums of Ammonium perchlorate
- 2 50-gallon drums and 150-lb boxes Explosive D (ammonium picrate)
- 109,000 lbs of M30 Propellant
- 320,000 lbs of Clean Burning Incendiary (CBI)
- 661,000 lbs of Nitrocellulose
- 1.817M lbs of Tritonal, mixed with tar
- 15M lbs of M6 propellant

c. The recommendations from both the initial TAV (conducted 2 and 3 April 2013), which focused on the explosive safety hazards posed by approximately 18M lbs of M6 propellant, and this TAV were offered to LASP and LANG for consideration for reducing the potential explosive hazards posed to the public by Explo's operations. On 20 May 2013, the Commander, Camp Minden informed the Army that effective 1200 hrs, on 20 May 2013, Explo-related public safety issues had been resolved, and LASP had revoked Explo's explosive license pending resolution of criminal charges.

Observations and Recommendations

Building 1650

Observation: The only building on Camp Minden's S-line that continues to store Explo's explosives is building 1650. This is a metal structure containing approximately 130,000 lbs of Tritonal (80% TNT and 20% aluminum powder, with some tar contamination). The Tritonal in this building is contained in palletized, cardboard boxes. The explosives safety quantity distance arcs from this building extend over 3rd Avenue, which is an on-post road that is used as a local school bus route; therefore, it is considered a public traffic route. LASP and LANG consider this a public safety issue. The TAV team agreed this public exposure poses a potential catastrophic risk that should be addressed.

Recommendation: The TAV team believes, based on its observations and the condition of this Tritonal, that this Tritonal is safe to handle, transport, and store in its current configuration on post. However, some boxes may need to be re-palletized. The TAV surveyed 20 earth-covered magazines during the course of its review and identified storage space appropriate for the Tritonal currently in building 1650. The TAV team recommends the Tritonal be re-warehoused to the earth-covered magazines identified, as soon as possible. Once this is accomplished, the potential explosives safety hazards on the S-Line in building 1650, which are of concern to the LASP and LANG, will be eliminated. This will be a significant accomplishment to reduce public risk.

Disposition of M6 Propellant and other Explosives

Observation: The TAV team surveyed an area for burning explosives (potential burning ground), primarily the M6 propellant. This area, which is next to Camp Minden's E-Line, could be used for open burning (treatment) of propellants (Hazard Classification {HC} 1.3) and potentially for explosives (e.g., Tritonal), which are HC 1.1, and explosive-contaminated material (e.g., red water). (See Figure 1.)

Recommendation: The TAV team recommends (a) vegetation be cleared in and around the potential burning grounds; (b) access to areas to be used for burn pans, staging and explosives handling, and to the storage area for support material and equipment be improved; (c) crushed rock be added throughout the burning grounds; and (d) a personnel operating structure be sited outside of K-24 for the crew's use during burns. The TAV team also recommends consideration be given to installing barrier material to minimize potential environmental contamination due to residues from treatment of propellant and other materials. Applicable environmental requirements under federal, state and local laws pertaining to waste storage, treatment, and disposal operations involving burning, including permitting, which are not otherwise discussed in this report, should be

addressed by the LANG. The burning grounds may be sited to accommodate 10 burn pans, each capable of holding up to 4,000 pounds of propellant per burn. Assuming LANG could conduct 2 burns of up to 80,000 lbs per day, the remaining M6 propellant (approximately 15M pounds) might be destroyed in less than a year.

Propellant Burning Operations

Observation: Open burning of propellant and other explosives is an extremely hazardous operation that requires a comprehensive explosives safety management program (ESMP).

Recommendation: If LANG decides to conduct these burning operations, the TAV team recommends LANG or LASP begin planning for the equipment and support needed for this operation. To assist in planning, the TAV recommends LANG and/or LASP consider the actions listed below prior to conducting burning operations.

- Determine the ownership of the materials to be disposed, and LANG's or LASP's authority to dispose of these materials.
- Seek the assistance needed, if any, to carry out the recommended actions.
- Coordinate with environmental regulators and obtain environmental permits, if any, required by applicable federal, state, or local laws or regulations.
- Develop:
  - Burning ground site safety plan.
  - Standing Operating Procedures.
  - Qualifications and responsibilities or tasks for the personnel involved (e.g., supervisor, technical support, surveillance personnel).
  - Procedures for physical security and access control that are required to ensure worker and public safety.
  - Spill response plan.
- Fabricate burn pans and equipment required to load propellants into the burn pans.
- Clear vegetation, conduct surface improvements and any required construction.
- Establish and site an operating building for the crew's use during burning operations.
- Determine the:
  - Type of firefighting equipment needed on site, and coordinate with local medical and fire departments for contingency support.
  - Tools, Material Handling Equipment, and personnel protective equipment (PPE) required for the conduct of operations.
  - Electrical support, including grounding systems, required for safe operations.
  - Federal, state, or local regulatory requirements that may apply to closure of the burning grounds after these operations are complete.

- Plan and implement solid and hazardous waste (e.g., ash) collection, sampling and disposal procedures.

M6 Propellant Stability

Observation: Low stability content can result in auto-ignition of propellant in storage, causing a detonation. At Camp Minden, Explo's operations appear to have resulted in the loss of lot identity for the M6 propellant that Explo has in storage. Explo's packaging configurations (e.g., incorrect lot markings on containers and outer-packs, multiple markings); storage procedures, which exposed some of the packaged propellant to the environment; and packaging process, which may have mixed lots led the TAV team to conclude that lot identity was, at a minimum, questionable. Explo did not have a propellant stability monitoring program in place. Although the transfer of M6 propellant to earth-covered storage has reduced the risk to public safety, an explosive event (i.e., a detonation) from auto-ignition is very possible without a propellant stability monitoring program in place to track the propellant's stabilizer content and address potentially unstable propellant.

Recommendation: The TAV team recommends a plan for establishing a propellant stability monitoring program at Camp Minden be developed. The potential risks associated with the continued storage of propellant should be conveyed to all concerned, including commercial contractors located on Camp Minden. The TAV team also recommends LANG seek the assistance it needs, if any, to develop this plan.

Other Matters:

- **Observation:** The TAV team surveyed 20 earth-covered magazines, operating buildings, and the Super Critical Water Oxidation (SCWO) operating building. Explo reportedly was developing the SCWO under a sub-contract with General Atomics. In addition to the M6 propellant and Tritanol, Explo had in storage: Explosive D (ammonium picrate); Composition H6; black powder; M30 propellant; nitrocellulose in water (marked ATK-Radford AAA), and clean burning incendiary (CBI). Explo stored M6 propellant in 3 configurations: 880 lb sacks, 110 lb drums, and 32 lb cardboard boxes. These materials are discussed in other observations below and quantities are summarized here.

  Recommendation: Based on the condition and known hazards associated with the above mentioned explosives, the TAV team recommends disposal of this material in the order of priority indicated below. The recommended method of treatment is also provided.

  - Explosive D in drums, which may have crystallized, making it more sensitive, should be disposed of as soon as practical. (LASP has requested Army Explosive Ordnance Disposal (EOD) assistance in assessing the condition of

these explosives and recommending to LASP courses of action for LASP to dispose of it safely.) Quantity: 2 50-gal drums (1 metal, 1 plastic) and 3 50-lb boxes.
- Ammonium perchlorate, which may have crystallized, making it more sensitive, should be disposed. Quantity: 4 50-gal drums (plastic).
- SCWO influent, unknown quantity or composition. Quantity: several 16 oz bottles and a large tank.
- Black powder, nitrocellulose, in water and CBI – destroy by burning. (Quantity: 128 lbs of black powder, 661,000 lbs of nitrocellulose, and 320,000 lbs of CBI).
- M30 Propellant – destroy by burning. Quantity: 109K lbs.
- Composition M6 Propellant – commercial sales or, if necessary, destroy by burning. Quantity: 15M lbs.
- Tritonal – destroy by burning or open detonation. Quantity: 1.817M lbs.
- Composition H6 – destroy by burning or open detonation. Quantity: 200 lbs.

- **Observation:** Building 1619 contains equipment for demilitarizing 750 lb bombs including equipment for melting out explosives and flaking Composition H6. This equipment and material, which is heavily contaminated with explosives residues, includes: autoclaves, kettles, re-melter, flaker belts, pumps, piping, rails, and platforms. In addition, the building that housed this operation is heavily contaminated. Among other contamination, the TAV team observed explosive-contaminated fixtures, sprinkler systems, walls, floors, and ceilings.

  Recommendation: The TAV team recommends LANG explore the feasibility of decontaminating; disassembling, with additional decontamination, as required; and disposal of explosive-contaminated material that cannot be decontaminated. The TAV team also recommended LANG seek the assistance it needs, if any, to develop a plan for decontaminating this explosive-contaminated material.

- **Observation:** Approximately 200 lbs of Composition H6 is in building 1619 near the Composition H6 flaking operation.

  Recommendation: The TAV team recommends LANG prepare a plan for collecting and packaging the explosives left in this building and moving it to earth-covered storage.

- **Observation:** Inside building 1619 (between the 750 lb bomb demilitarization operation and Composition H6 flaker belts) is a hazardous waste storage area holding with 3, 50-pound boxes of Explosive D.

  Recommendation: These explosives are recommended to be disposed as waste in coordination with the appropriate regulatory agency. (LASP has requested Army EOD assistance in assessing the condition of these explosives and recommending to LASP courses of action for LASP to dispose of it safely.)

- **Observation:** The SCWO is not operational, but four drums of ammonium perchlorate mixed with water and two drums of ammonium picrate (Explosive D) mixed with water, which were used as feedstock for the SCWO, remain.

  Recommendation: These drums are recommended to be disposed as waste, in coordination with the appropriate regulatory agency. (LASP has requested Army EOD assistance in assessing the condition of these explosives and recommending to LASP courses of action for LASP to dispose of it safely.)

- **Observation:** There are two large effluent tanks in the SCWO building that contain unknown material. According to Explo personnel, these tanks only contain iron oxide in water, and were reportedly tested by Toxicity Characteristics Leaching Procedure (TCLP) analysis.

  Recommendation: Ownership and responsibility for SCWO-related materials should be determined by the LANG. LANG may coordinate with the owner to arrange for suitable chemical analysis and seek the material's proper disposal in compliance with applicable federal and state laws.

- **Observation:** A refrigerator in the SCWO building contains several 16oz plastic containers of test influent that was intended as input for the SCWO.

  Recommendation: LANG may coordinate with the material's owner to arrange for suitable chemical analysis and then seek the materials proper disposal in compliance with applicable federal and state laws. (LASP has requested Army EOD assistance in assessing the condition of these explosives and recommending to LASP courses of action for LASP to dispose of it safely.)

- **Observation:** A large stainless steel tank in the SCWO building contains an unknown chemical influent intended as input for the SCWO. This container potentially contains Explosive D and/or ammonium perchlorate.

  Recommendation: This container should not be moved, handled, or its contents removed until its contents are analyzed and identified, and proper disposition is determined. LANG may coordinate with the material's owner to arrange for suitable chemical analysis and proper disposal in compliance with applicable federal and state laws.

- **Observation:** The TAV team recommends that safety clearance zones near the E-line be established for the potential burning grounds.

  Recommendation: Figure 1 (below) depicts the safety clearance zones the TAV team recommends for the burning grounds. With the recommended safety clearance, the burning grounds should be able to accommodate safely 10 burn pans, each one capable of holding up to 4,000 pounds of propellant.

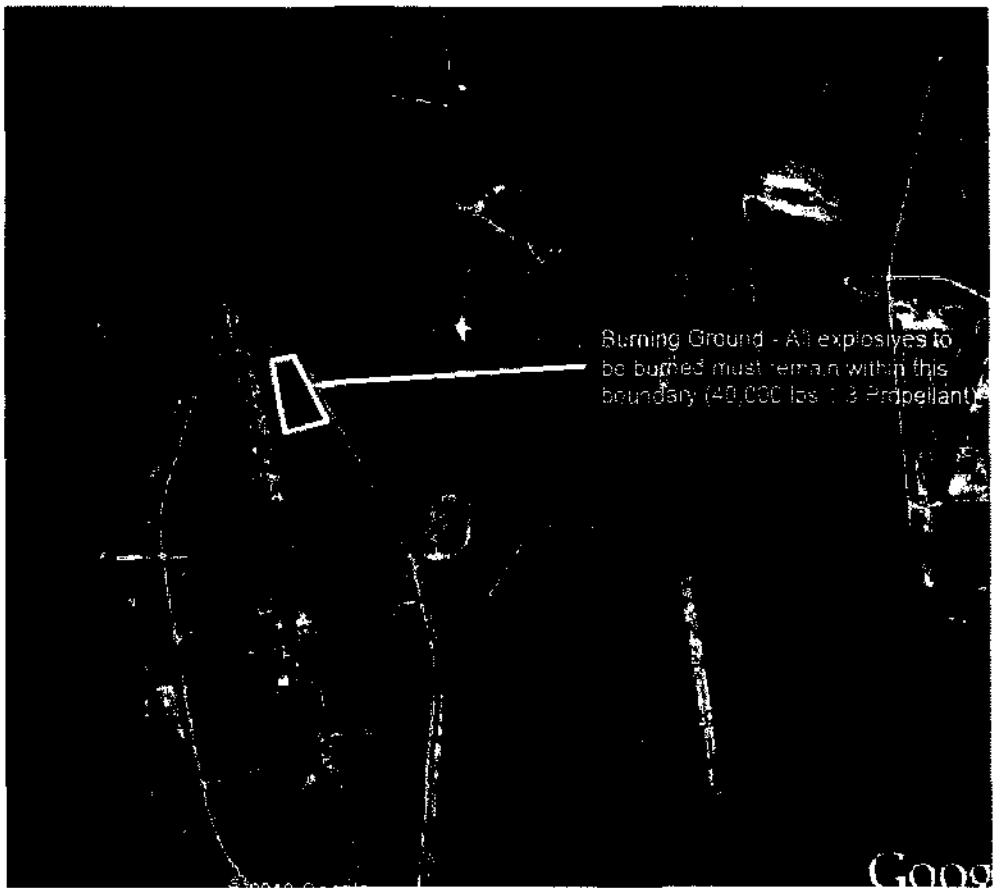
Burning Ground - All explosives to
be burned must remain within this
boundary (40,000 lbs TNT Equivalent)

Figure 1